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# Research in Social and Administrative Pharmacy

journal homepage: [www.rsap.org](http://www.rsap.org)

## Original Research

### Correction of misleading information in prescription drug television advertising: The roles of advertisement similarity and time delay



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#### A B S T R A C T

#### Keywords:

Corrective advertising  
Direct-to-consumer prescription drug advertising  
Misinformation  
Risk communication

**Background:** Prescription drug television advertisements containing potentially consequential misinformation sometimes appear in the United States. When that happens, the U.S. Food and Drug Administration can request that companies distribute corrective advertisements to address misinformation and inaccurate claims. Previous research has demonstrated effectiveness in corrective advertising for various products.

**Objectives:** The present article builds on that work with a randomized experimental study ( $n = 6454$ ) of corrective advertising investigating the extent to which visual similarity matters between violative and corrective ads and the extent to which time delay matters between violative and corrective advertisement exposure.

**Methods:** Our study sample included overweight or obese U.S. adults recruited from an existing online consumer panel representative of the U.S. adult population. We created a brand for a fictitious prescription weight-loss drug and produced corresponding direct-to-consumer (DTC) television ads. All participants viewed the same violative ad, but were randomly assigned to view corrective ads with different levels of visual similarity and exposure time delay using a  $4 \times 4$  between-subjects factorial design.

**Results:** Results suggest corrective ad exposure can influence consumer perceptions of drug efficacy, risks, and benefits previously established by violative ads that overstated drug efficacy, broadened drug indication, and omitted important risk information. Corrective ads also can weaken consumer intentions to consider and investigate a drug. However, ad similarity does not appear to affect consumer perceptions and preferences. Although we found that the effects of violative ad exposure tend to diminish over time, the length of the delay between violative and corrective ad exposure has limited influence. An exception to this was observed with regard to recall of drug benefits and risks, where the impact of corrective ad exposure increases with greater time delay.

**Conclusions:** These results extend previous research to a new health condition and hold implications for regulatory policy.

Published by Elsevier Inc.

In the United States, the current regulatory approach of the Food and Drug Administration (FDA) toward direct-to-consumer prescription drug advertising centers on post-marketing detection and response to advertising that violates relevant regulations (i.e., violative advertising) rather than on explicitly prohibiting violative

advertising through advance review of advertisements before broadcast. As a result, advertisements containing misinformation can and do appear on the airwaves, at least briefly, and there have been a number of prominent examples.<sup>1</sup> When violative advertisements do air, the FDA can request that advertisers discontinue the ad and disseminate ads that attempt to correct the misinformation.

Patients attend to and process the types of drug risk and benefit information that are typically included in DTC advertising,<sup>2,3</sup> which

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means that correcting misinformation about these products is important from a public health perspective. Public policy researchers and advocates in the United States have considered corrective advertising as a remedy for deceptive advertising for several decades.<sup>4,5</sup> In the late 1970s, corrective ads as a policy move emerged for the first time on a national stage when the U.S. Federal Trade Commission (FTC) requested that the sponsor of Listerine mouthwash produce corrective ads, which they did.<sup>5</sup> Although corrective advertising appeared infrequently in the 1980s and 1990s, federal agencies have demonstrated a renewed consideration of corrective advertising in recent years.<sup>6–9</sup> In the past decade, policymakers have requested corrective ads to counteract several prominent campaigns that were in violation of advertising laws. In 2009, for example, Bayer HealthCare Pharmaceuticals produced and aired corrective DTC advertising for Yaz (a birth control pill) following a warning letter from FDA regarding misleading claims and presentations; the ads developed for the corrective campaign explicitly countered information previously broadcast.<sup>10</sup>

### Recent evidence for corrective advertising effects

More recently, a study by Aikin and colleagues<sup>11</sup> provided important experimental evidence to suggest that corrective television advertising can counteract audience perceptions resulting from exposure to a misleading DTC ad. Researchers randomly assigned participants to see one of four combinations of advertisements: a violative ad for a prescription drug to control asthma symptoms, the same violative ad followed by another that explicitly corrected inaccurate claims in the violative ad, the corrective ad only, or a “reminder” ad that mentioned only the drug name and showed a family walking outside. The study found that corrective advertising essentially realigned viewer beliefs about the drug to match those derived from seeing only a reminder ad. Specifically, corrective ads appear to have deflated benefit perceptions (counteracting a misleading claim that overstated drug efficacy) and increased perceived risk (partially counteracting the omission of important risk information).

In combination with past work to investigate corrective advertising effects on commercial product perceptions<sup>12</sup> and on smokers' responses to corrective statements regarding the tobacco industry,<sup>13</sup> results from the aforementioned Aikin et al study suggest that corrective television advertising can be useful for correcting misperceptions about prescription drugs. Both the study's experimental design and its high-quality television ads strengthen the evidence the study provides. Importantly, the work demonstrates the possibility for audience engagement with corrective information when this information explicitly points out violative ad misinformation and provides the corresponding correct information. Whereas some previous studies have found relatively low levels of corrective message comprehension among consumers,<sup>14</sup> the majority of respondents in the Aikin et al study correctly interpreted corrective messages.

The explicit framing of the corrective messages in the study, in which an actress explicitly notes the intent to “correct” previous claims, may have contributed to the Aikin et al results. The experimental manipulation presented a relatively direct set of contrasts: The violative ad promoted a prescription drug while overstating efficacy and omitting important risk information, whereas the corrective ad explicitly emphasized the intention to correct statements made in the earlier ad. Participants generally comprehended the corrective ad's intention and responded to that correction, suggesting that explicitly corrective ads can counteract the effects of violative claims in DTC advertising.

Although the Aikin et al study offers foundational evidence on

the effects of corrective prescription drug television advertising, important questions remain. First, the Aikin et al study focused on one symptomatic, chronic condition (asthma); researchers should replicate study results for additional health conditions. Second, we need more work to expand beyond the typical constraints of experimental research on television advertising to explore the extent to which study results generalize to settings outside of an experimental laboratory. We need to determine whether corrective advertising can be effective in the context of real-world circumstances such as opportunities for multiple exposures to a violative advertisement before a corrective advertisement appears. Third, corrective advertising can vary in important ways, and we need to understand whether the format or timing of corrective advertising matters.

### Limitations in advertising study realism

Although experimental studies can allow researchers to rule out potentially confounding factors, scholars have raised important critiques of experimental work. Bernhardt, Kinnear, and Mazis,<sup>15</sup> for example, have noted the limitation of laboratory studies in which participants see advertisements in isolation, because people typically do not see advertisements in the absence of any context. As a result, researchers should seek to embed television advertisements within other content—such as a set of unrelated advertisements—instead of showing them as standalone ads.

In addition, laboratory studies sometimes rely on a single exposure to a stimulus; yet most conventional television advertising campaigns are built on an assumption that repeated exposure matters. Previous research has established a strong positive relationship between the frequency of exposure and consumer tendency to remember the advertising in question.<sup>16</sup> Given the goal of correcting previously established beliefs about a brand name prescription drug, it seems reasonable to expose individuals to the same violative advertisement more than once.

### Dimensions of variation in corrective advertising

Advertising is not monolithic. Advertisements vary considerably in quality and approach, and there is a range of ways to produce a corrective ad. In light of that notion, we have an opportunity to address the question of whether variation in corrective advertising might influence the effectiveness of such advertising. There are two dimensions of particular importance: (1) similarity between violative and corrective ads in appearance and (2) the timing of corrective advertising exposure relative to violative advertising exposure.

Past empirical literature offers us relatively little information about the impact of visual element similarity across violative and corrective advertisements specifically. In fact, previous work on visual communication suggests conflicting outcomes. On the one hand, work on cognitive priming<sup>17</sup> would suggest that using a previously presented visual element might assist viewers in retrieving previous messages and thus facilitate message correction. On the other hand, given the importance of visual element novelty in soliciting attention,<sup>18</sup> it is conceivable that excessive use of previous visual elements could discourage attention to the new corrective message and thus threaten processing and memory for many viewers. A third possibility is that the use of explicit corrective messages will trump priming and novelty effects, meaning that any explicit corrective message will have a similar effect regardless of the visual match between violative and corrective advertisements.

A robust mass communication literature also has suggested that timing can be an important consideration for media effects,

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